We claim:

1. An optical circulator comprising:

a plurality of ports, wherein an input port is disposed to launch unpolarized light into the circulator, two sequential ports are disposed to receive polarized light, and an exit port is disposed to receive unpolarized light;

a beam-splitting and -combining element, configured to split a beam of light propagating in a forward direction along a first light path, into a second and a third light path, the second and third light paths having mutually-orthogonal polarization, said splitting/combining element also configured to combine mutually-orthogonally-polarized light beams propagating in the reverse direction along a fourth and a fifth light path into a single beam of light propagating along a sixth light path; and

a non-reciprocal polarization rotator, configured to rotate polarization directions of light propagating along the second and third light paths and to rotate polarization directions of light propagating along the fourth and fifth light paths.

2. The optical circulator of claim 1 further comprising:

an angle modifier, configured to modify the angle of propagation of a light beam.

3. The optical circulator of claim 2, wherein the angle modifier is configured to deflect a light beam propagating in a forward direction toward the splitting/combining element.

4. The optical circulator of claim 3, further comprising a second angle modifier, configured to deflect light travelling along the third light path.

5. The optical circulator of claim 4, wherein the angle modifiers are individually selected from the group consisting of mirrors and prisms.

6. The optical circulator of claim 2, wherein the angle modifier comprises first and second tapered plates of birefringent material, the first and second plates having perpendicular optical axes.

7. The optical circulator of claim 1, wherein the input and exit ports are provided with a first lens, and each of the two sequential ports are provided with second and third lens, respectively, wherein the lenses are used to collimate and focus light entering and exiting the optical circulator.

8. The optical circulator of claim 1, wherein the input and exit ports are provided with a first lens and the two sequential ports are provided with a second lens, wherein the lenses are used to collimate and focus light entering and exiting the optical circulator.

9. The optical circulator of claim 1, further comprising:
a birefringent translating unit configured to laterally displace a light beam propagating therethrough with a first polarization direction and to transmit without lateral displacement a light beam having a second polarization direction orthogonal to the first polarization direction.

10. The optical circulator of claim 1, further comprising a half wave plate, adapted to rotate the polarization of a beam by approximately 90°.

11. The optical circulator of claim 1, wherein the non-reciprocal polarization rotator is configured to render two parallel polarizations perpendicular and two perpendicular polarizations parallel with respect to each other, and is selected from the group consisting of two half wave plates and one Faraday rotator, one half wave plate and one Faraday rotator, and a Faraday rotator.

12. An optical circulator comprising:

a plurality of ports, wherein an input port is disposed to launch unpolarized light into the circulator, two sequential ports are disposed to receive polarized light, and an exit port is disposed to receive unpolarized light;

a first lens, configured to collimate a first light beam propagating in a forward direction from the input port, and configured to focus a sixth light beam into the exit port;

a beam-splitting and -combining element, configured to split the first beam of light into a second and a third beam, the second and third beams having mutually-orthogonal polarization, said splitting/combining element also configured to combine mutually-orthogonally-polarized fourth and fifth light beams propagating in the reverse direction from the two sequential ports into the single sixth beam;

a first non-reciprocal polarization rotator, configured to rotate polarization directions of the second and third light beams and to rotate polarization directions of the fourth and the fifth light beams such that two parallel polarizations are

rendered perpendicular and two perpendicular polarizations are rendered parallel to each other;

an angle modifier, configured to modify the angle of propagation of a light beam, comprising first and second tapered plates of birefringent material, the first and second plates having perpendicular optical axes, adapted to render the second and third light beams parallel to the longitudinal axis;

a second non-reciprocal polarization rotator, configured to rotate polarization directions of light propagating along the second and third light paths, and to rotate polarization directions of light propagating along the fourth and fifth light paths, such that two parallel polarizations are rendered perpendicular and two perpendicular polarizations are rendered parallel to each other; and

a second lens, adapted to focusing the second light beam into one of said sequential ports, and adapted to collimating the fourth light beam emanating from the one of said sequential ports.

13. The optical circulator of claim 12, wherein the first lens is adapted to impart an angle θ to the first light beam with respect to a longitudinal axis defined by the direction of propagation of said light beam when the first light beam is launched into the circulator from the input port.

14. The optical circulator of claim 12, wherein the angle modifier is adapted to impart an angle of ϕ with respect to the longitudinal axis to the fourth and fifth light beams

15. The optical circulator of claim 12, further comprising a birefringent translating unit configured to laterally displace a light beam propagating therethrough with a first polarization direction and to transmit without lateral displacement a light beam having a second polarization direction orthogonal to the first polarization direction, adapted to laterally displace the fifth and sixth beams.

16. The optical circulator of claim 12 further comprising a birefringent block adapted to diverging the second and third light beams with respect to each other and adapted to converging the fourth and fifth light beams with respect to each other.

17. The optical circulator of claim 16, further comprising a prism adapted to laterally displace the third beam.

18. The optical circulator of claim 12 , wherein the input and exit ports are located adjacent to each other and the two sequential ports are located adjacent to each other, and wherein the plane the first and fourth ports is parallel to the plane containing the two sequential ports.

19. The optical circulator of claim 12, further comprising a half wave plate, adapted to rotate the polarization of a beam by approximately 90°.

20. The optical circulator of claim 12, wherein the non-reciprocal polarization rotators are individually selected from the group consisting of two half wave plates and one Faraday rotator, one half wave plates and one Faraday rotator, and a

Faraday rotator.

21. An optical circulator comprising:

a plurality of ports, wherein an input port is disposed to launch unpolarized light into the circulator, two sequential ports are disposed to receive polarized light, and an exit port is disposed to receive unpolarized light;

a first lens, configured to collimate a first light beam propagating in a forward direction from the input port, and configured to focus a sixth light beam into the fourth port;

a beam-splitting and -combining element, configured to split the first beam of light into a second and a third beam, the second and third beams having mutually-orthogonal polarization, said splitting/combining element also configured to combine mutually-orthogonally-polarized fourth and fifth light beams propagating in the reverse direction into the single sixth beam;

a first non-reciprocal polarization rotator, configured to rotate polarization directions of the second and third light beams and to rotate polarization directions of the fourth and the fifth light beams such that two parallel polarizations are rendered perpendicular and two perpendicular polarizations are rendered parallel to each other;

a first angle modifier, configured to modify the angle of propagation of a light beam, comprising first and second tapered plates of birefringent material, the first and second plates having perpendicular optical axes, adapted to render the second and third light beams parallel to the longitudinal axis;

a second non-reciprocal polarization rotator, configured to rotate polarization directions of light propagating along the second and third light paths, and to rotate

polarization directions of light propagating along the fourth and fifth light paths, such that two parallel polarizations are rendered perpendicular and two perpendicular polarizations are rendered parallel to each other, such that two parallel polarizations would be rendered perpendicular and two perpendicular polarizations would be rendered parallel to each other;

a second angle modifier, configured to modify the angle of propagation of a light beam, comprising first and second tapered plates of birefringent material, the first and second plates having perpendicular optical axes, adapted to converge the second and third light beams, and to render parallel the fourth and fifth light beams; and

a second lens, adapted to focus the second and third light beams into the two sequential ports, respectively, and adapted to collimate the fourth and fifth light beams emanating from the two sequential ports, respectively.

22. The optical circulator of claim 21, wherein the first lens is adapted to impart an angle θ to the first light beam with respect to a longitudinal axis defined by the direction of propagation of said light beam when it is launched into the circulator from the input port.

23. The optical circulator of claim 21, wherein the angle modifier is adapted to impart an angle of ϕ with respect to the longitudinal axis to the fourth and fifth light beams.

24. The optical circulator of claim 21, further comprising a birefringent translating unit configured to laterally displace a light beam propagating

therethrough with a first polarization direction and to transmit without lateral displacement a light beam having a second polarization direction orthogonal to the first polarization direction, adapted to laterally displace the fifth and sixth beams.

25. The optical circulator of claim 21, further comprising a polarizer.

26. The optical circulator of claim 21, wherein the first and fourth ports are located adjacent to each other and the second and third ports are located adjacent to each other, and wherein the plane of the first and fourth ports is parallel to the plane containing the second and third ports.

27. The optical circulator according to claim 22, wherein the plane containing the second and third beams is perpendicular to the plane containing the angle θ.

28. The optical circulator of claim 21, further comprising a half wave plate, adapted to rotate the polarization of a beam by approximately 90°.

29. The optical circulator of claim 21, wherein the non-reciprocal polarization rotators are individually selected from the group consisting of two half wave plates and one Faraday rotator, one half wave plates and one Faraday rotator, and a Faraday rotator.

30. The circulator of claim 12, further comprising a third lens, adapted to focusing the third light beam into the other of said sequential third ports, and adapted to collimating the fifth light beam emanating from the other of said

sequential ports.

31. A method for circulating and polarizing light, the method comprising:

providing a plurality of ports, wherein an input port is disposed to launch unpolarized light into the circulator, two sequential ports are disposed to receive polarized light, and an exit port is disposed to receive unpolarized light;

splitting a beam of light propagating in a forward direction along a first light path, into a second and a third light path, the second and third light paths having mutually-orthogonal polarization;

non-reciprocally rotating the polarization directions of light propagating along the second and third light paths;

combining mutually-orthogonally-polarized light beams propagating in the reverse direction along a fourth and a fifth light path into a single beam of light propagating along a sixth light path; and

rotating polarization directions of light propagating along the fourth and fifth light paths.